

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 Claim 1 (original): An image sensing apparatus having a
2 distance measuring unit, comprising:
3 an image sensing element to form an object image
4 which enters via a photographing optical system;
5 a distance measuring unit to measure distances to a
6 plurality of points within a photographing frame using an
7 optical path different from an optical path of
8 photographing optical system;
9 a determination unit to determine a relationship
10 between a distance measuring result of the distance
11 measuring unit and a drive amount of the photographing
12 optical system, on the basis of the distance measuring
13 result upon measuring a distance to a first point of the
14 plurality of points by the distance measuring unit and a
15 change in contrast of the object image formed at a
16 position corresponding to the first point on the image
17 sensing element when a focal point position of the
18 photographing optical system has changed; and
19 a control unit to control the focal point position
20 of the photographing optical system, on the basis of a
21 distance measuring result of the distance measuring unit
22 at a second point of the plurality of points, which is
23 different from the first point and the relationship
24 determined by the determination unit.

1 Claim 2 (original): The image sensing apparatus
2 according to claim 1, wherein the distance measuring unit
3 comprises:

4 a distance calculation unit to calculate distances
5 to objects present at the plurality of points by
6 detecting image signals of the objects present at the
7 plurality of points; and

8 a setting unit to set a highest-contrast point of
9 plurality of points as the first point, and to set a
10 point corresponding to the nearest distance to the object
11 calculated by the distance calculation unit as the second
12 point.

1 Claim 3 (original): The image sensing apparatus
2 according to claim 1, wherein the distance measuring unit
3 comprises a principal object detection unit to detect a
4 location of a principal object from the plurality of
5 points, and

6 the determination unit comprises a setting unit to
7 set a point where the principal object is present as the
8 second point.

1 Claim 4 (original): The image sensing apparatus
2 according to claim 3, wherein the principal object
3 detection unit detects a point, at which the distance
4 measuring result indicates a nearest distance, of the
5 plurality of points as the point where the principal
6 object is present.

1 Claim 5 (original): The image sensing apparatus
2 according to claim 1, wherein the distance measuring unit
3 measures distances to objects present at the plurality of
4 points by a passive or active method.

1 Claim 6 (withdrawn): The image sensing apparatus
2 according to claim 1, wherein the distance measuring unit
3 comprises a principal object detection unit to detect a
4 principal object on the basis of the distance measuring
5 result, and the determination unit comprises a setting
6 unit to set, as the first point, a point corresponding to
7 a distance near a current focal point position of a
8 photographing lens of the distance measuring results at
9 the plurality of points, and to set a point where the
10 principal object is present as the second point.

Claims 7-15 (canceled)

1 Claim 16 (original): An image sensing apparatus having a
2 distance measuring unit, comprising:
3 an image sensing element;
4 a photographing optical system to form an object
5 image on an imaging surface of the image sensing element;
6 a drive unit to change a focal point position of the
7 photographing optical system;
8 an image processing unit to generate image data from
9 an output signal of the image sensing element;
10 a distance measuring optical system having an
11 optical path different from an optical path of the
12 photographing optical system;
13 a distance measuring unit to measure a distance at a
14 specific point of an object field via the distance
15 measuring optical system; and
16 a CPU connected to the drive unit, the image
17 processing unit, and the distance measuring unit, the CPU
18 determining a position error of the photographing optical
19 system with respect to a distance measuring result of the

20 distance measuring unit, on the basis of the distance
21 measuring result to the specific point obtained by the
22 distance the distance measuring unit and a change in
23 contrast of the image data obtained upon changing the
24 focal point position of the photographing optical system
25 by controlling the drive unit.

1 Claim 17 (original): The image sensing apparatus
2 according to claim 16, wherein the distance measuring
3 unit measures the distance by detecting an image signal
4 of an object present at the specific point.

1 Claim 18 (original): The image sensing apparatus
2 according to claim 16, wherein the distance measuring
3 unit has a plurality of specific points, and
4 the CPU determines the position error at a
5 highest-contrast point of the plurality of specific
6 points.

1 Claim 19 (original): A method of controlling an image
2 sensing apparatus, which has a distance measuring unit to
3 measure an object distance via a distance measuring
4 optical system different from an optical path of a
5 photographing optical system, comprising:
6 measuring an object distance at a specific point of
7 an object field via the distance measuring optical
8 system;
9 searching for a highest-contrast lens position while
10 displacing the photographing optical system; and
11 calculating position error information of the
12 photographing optical system on the basis of the measured
13 object distance and the searched lens position.

1 Claim 20 (original): The method according to claim 19,
2 further comprising: determining a focal point adjustment
3 position of the photographing optical system on the basis
4 of a new object distance measured by the distance
5 measuring unit, and the position error information.